

January 1, 2014

Actuarial Valuation Report

West Springfield Retirement Board

Lawrence B. Stone



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December 5, 2014

West Springfield Retirement Board
26 Central Street
Suite 26
West Springfield, MA 01089

Dear West Springfield Retirement Board:

Stone Consulting, Inc. has performed a January 1, 2014 actuarial valuation of the West Springfield Retirement System. This valuation and report was prepared using generally accepted actuarial principles and practices and meets the parameters set by the Governmental Accounting Standards Board Statement (GASB) No. 27. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system.

As part of performing the valuation, Stone Consulting, Inc. was furnished member data by the West Springfield Retirement System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. In addition, the administrative staff furnished financial statements that were not audited by the actuary or by the plan's auditors.

The funding objective of the plan is to fully fund the system while attempting to maintain a stable contribution amount for the upcoming fiscal year that is consistent with prior funding schedules or if employer finances allow it, to increase the contribution amount. This funding objective is being met.

We anticipate over time the contribution level to remain at a level percentage of payroll. The contribution rate is determined by adding the normal cost plus an amortization of the unfunded actuarial accrued liability. The normal cost is expected to remain at a level percentage of payroll. The length of the funding schedule contained in this actuarial valuation report is twenty-one years (fully funded in Fiscal 2036). The contribution is set to increase by 4.00% each year. The contribution in Fiscal 2036 decreases instead of increasing.

The amortization payments are the amount left over after subtracting the normal cost and the 3(8)(c) payments from the contribution amount.

The contribution amount for Fiscal Year 2016 is \$6,186,624 which is \$17,089 greater than the anticipated contribution amount for Fiscal 2016 from the prior funding schedule. PERAC and GASB guidelines indicate that actuarial valuations should be conducted at least every other year. The West Springfield Retirement Board conducted their previous actuarial valuation effective January 1, 2012.

We are pleased to present the results of this valuation. If the Retirement Board has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in inaccurate or misleading understanding of the results.

I, Lawrence Stone, am a consultant for Stone Consulting, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.
Actuaries for the Plan

Lawrence B. Stone
Member, American Academy of Actuaries

TABLE OF CONTENTS

	PAGE
Introduction	1
January 1, 2014 Valuation Summary.....	1
January 1, 2014 Actuarial Valuation Results.....	3
History of Active Participants	4
Distribution of Plan Members.....	5
Valuation Methodology.....	7
Actuarial Accrued Liability and Funded Status.....	8
Charts of Selected Actuarial and Demographic Statistics.....	9
Development of Funding Schedule.....	10
Funding Schedule	11
Assumptions and Methodology Summary.....	12
Assets.....	13
Calculation of Valuation Assets.....	14
Disclosure Information Under GASB Statement 25	15
PERAC Information Disclosure	16
Actuarial Methods and Assumptions	17
Summary of Principal Provisions.....	21
Glossary of Terms.....	24

Introduction

This report presents the results of the actuarial valuation of the West Springfield Retirement System. The valuation was performed at the request of the Retirement Board as of January 1, 2014 for the purpose of determining the contribution requirements for Fiscal Year 2016 and beyond. The contribution requirements are based on:

- The financial condition of the system as of December 31, 2013
- The benefit provisions of M.G.L. Chapter 32 and related statutes;
- The demographics of members in the system (i.e., active and inactive participants, retirees and beneficiaries as of January 1, 2014);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (e.g., withdrawals, retirement, mortality, etc.)

January 1, 2014 Valuation Summary

	January 1, 2014	January 1, 2012	Change
Contribution Fiscal 2016	\$6,186,624	\$6,169,535	\$17,089
Funding Schedule Length (as of Fiscal 2016)	21 years	20 years	1 year
Funding Ratio	55% (59% MVA Basis)	53%	2%
Interest Rate Assumption	7.875%	7.75%	0.125%
Salary Increase Rate Assumption	4.00%	Same	0.00%

- The Fiscal Year 2016 contribution is about the same as the planned 2016 contribution. Stone Consulting, with agreement from the Retirement Board, values assets using a four-year asset smoothing method. In this approach, asset gains and losses are recognized over a four-year period. The purpose of this approach is to avoid wide swings in asset value from one year to the next.

The System experienced an 18.9% annual return on the market value of assets versus our prior valuation assumption of a 7.75% return, resulting in a \$14.8 million net actuarial gain. The System's asset portfolio, effective December 31, 2013 is approximately 74% equities and real estate and 26% fixed income and short-term investments. The interest rate assumption was increased to 7.875% to reflect anticipated market performance, decreasing the accrued liability by \$2.1 million.

- The salary increase assumption is based on the same select and ultimate table as the prior valuation. This assumption is based on expected future experience. Total compensation changed by 1.6% over the prior valuation; however average annual compensation (compensation divided by number of active members) changed by 1.8%.
- The COLA Base was increased to \$13,000 over the \$12,000 base from the prior valuation. This increased the accrued liability by \$838 thousand.
- The funding level of the West Springfield Retirement System is 55% compared to 53% for the January 1, 2012 actuarial valuation. Using market value of assets the funding level is 59%. Solely for the purpose of satisfying the requirement of Chapter 68 of the Acts of 2007 for not being considered an underperforming system, additional runs were made using an alternative set of assumptions. With a discount rate assumption of 8.00%, RP-2000 mortality table projected 9 years, market value of assets, and an alternate salary scale (3.00% steps for the first 5 years of service, 4.00% ultimate rate), the funding ratio is 65.28%.
- The schedule length is twenty-one (21) years, which is one year longer than the remaining schedule from the prior valuation. The maximum period permitted under Section 22F of Chapter 32 of the Massachusetts General Laws is 25 years (2040).

The Fiscal 2016 contribution is 4.00% higher than the prior year contribution and increases annually at 4.00% for another 19 years with a 65.65% decrease in the final year before full funding is scheduled to be attained.

- Non-economic assumptions were changed from the January 1, 2012 actuarial valuation. The mortality assumptions are based upon the RP2000 Table (sex-distinct) projected with generational mortality with Scale BB. The previous assumption used a 17 year projection with Scale AA. The net effect of this change increased the accrued liability by \$6.3 million.
- Projection using generational mortality produces a different mortality table for each year of birth. In this manner, the expected continued increase in how long a person lives is reflected. For example, a participant who is currently age 25 (who will not turn 65 for another 40 years) would be expected to live appreciably longer past 65 years of age than someone who is currently 65. Thus a superannuation retirement benefit starting in 2054 would on average be paid for appreciably longer than a similar benefit beginning in 2014.

January 1, 2014 Actuarial Valuation Results

	January 1, 2014	January 1, 2012	Percentage Change
Funding			
Contribution for Fiscal 2016	\$6,186,624		
Contribution for Fiscal 2016 based on current schedule		\$6,169,535	0.3%
Members *			
▪ Actives			
a. Number	569	570	-0.2%
b. Annual Compensation	\$23,755,789	\$23,378,362	1.6%
c. Average Annual Compensation	\$41,750	\$41,015	1.8%
d. Average Attained Age	47.8	47.4	0.8%
e. Average Past Service	12.4	12.3	1.0%
▪ Retired, Disabled and Beneficiaries			
a. Number	390	375	4.0%
b. Total Benefits*	\$8,211,229	7,247,669	13.3%
c. Average Benefits*	\$21,054	\$19,327	8.9%
d. Average Age	73.0	72.8	0.2%
▪ Inactives			
a. Number	125	135	-7.4%
Normal Cost			
a. Total Normal Cost	\$3,130,913	\$2,877,997	8.8%
b. Less Expected Members' Contributions	<u>2,123,794</u>	<u>2,070,440</u>	2.6%
c. Normal Cost to be funded by the Municipality	\$1,007,119	\$807,557	24.7%
d. Eighteen month adjustment	61,027	48,935	24.7%
e. Administrative Expense Assumption	<u>226,450</u>	<u>239,000</u>	-5.3%
f. Adjusted Normal Cost and Expense	\$1,294,596	\$1,095,492	18.2%

*Excluding State reimbursed COLA

	January 1, 2014	January 1, 2012	Percentage Change
Actuarial Accrued Liability as of January 1, 2014			
a. Active Members	\$72,337,468	\$64,213,653	12.7%
b. Inactive Members	919,745	846,219	8.7%
c. Retired Members and Beneficiaries	<u>81,872,172</u>	<u>70,681,031</u>	15.8%
d. Total	\$155,129,385	\$135,740,903	14.3%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability	\$155,129,385	\$135,740,903	14.3%
b. Less Actuarial Value of Assets	<u>85,583,879</u>	<u>72,256,105</u>	18.4%
c. Unfunded Actuarial Accrued Liability	\$69,545,506	\$63,484,798	9.5%
d. Eighteen month adjustment	<u>\$4,069,493</u>	<u>\$3,380,205</u>	
e. Adjusted Unfunded Actuarial Accrued Liability	\$73,614,999	\$66,865,003	

- The data was supplied by the West Springfield Retirement Board. The data was checked under broad parameters for reasonableness. With the assistance of the staff of the West Springfield Retirement Board, we were able to develop a database sufficient for valuation purposes.
- Payroll changed by 1.6% over the course of the past two years. Average annual compensation changed by 1.8% over the same time period.
- The salary increase assumption includes general wage adjustments, step increases, and promotional increases.

History of Active Participants

Valuation Year	Number	Average Age	Average Past Service	Average Annual Compensation
2014	569	47.8	12.4	\$41,750
2012	570	47.4	12.3	\$41,015
2010	564	47.5	12.0	\$38,564
2008	592	47.1	11.8	\$36,106
2007	578	47.4	11.7	\$34,205
2006	579	45.9	11.3	\$32,341
2004	575	45.8	10.2	\$30,845
2002	577	46.0	10.6	\$29,271

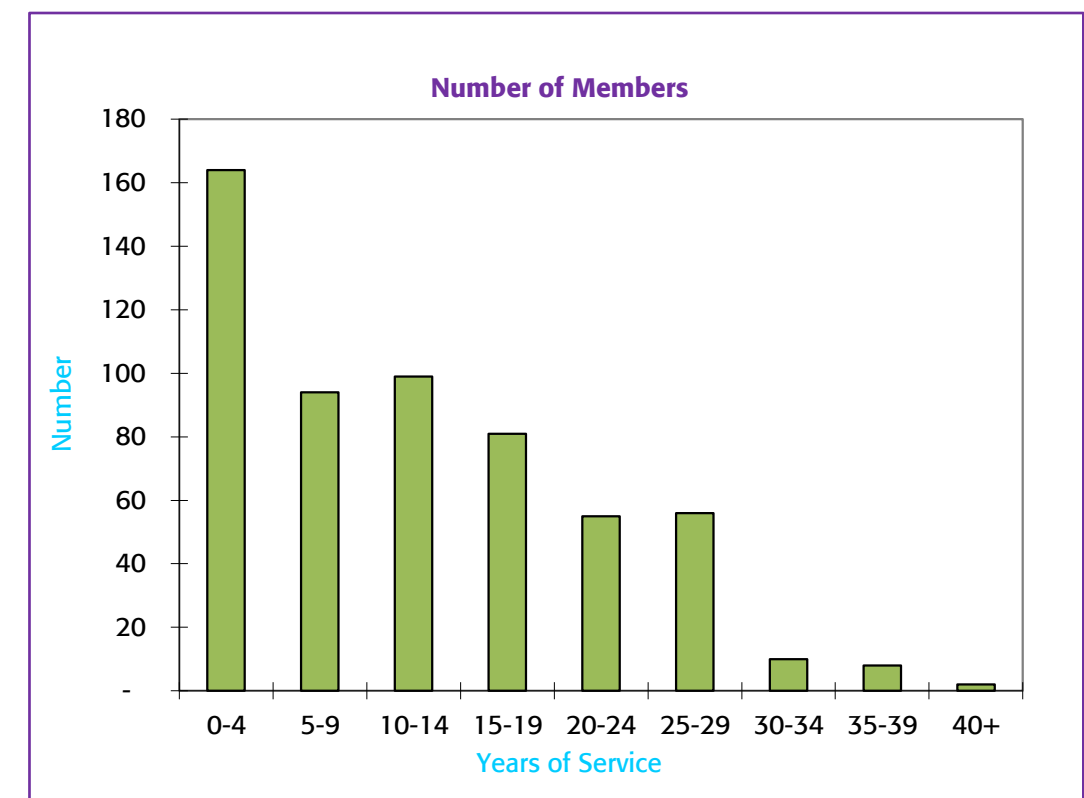
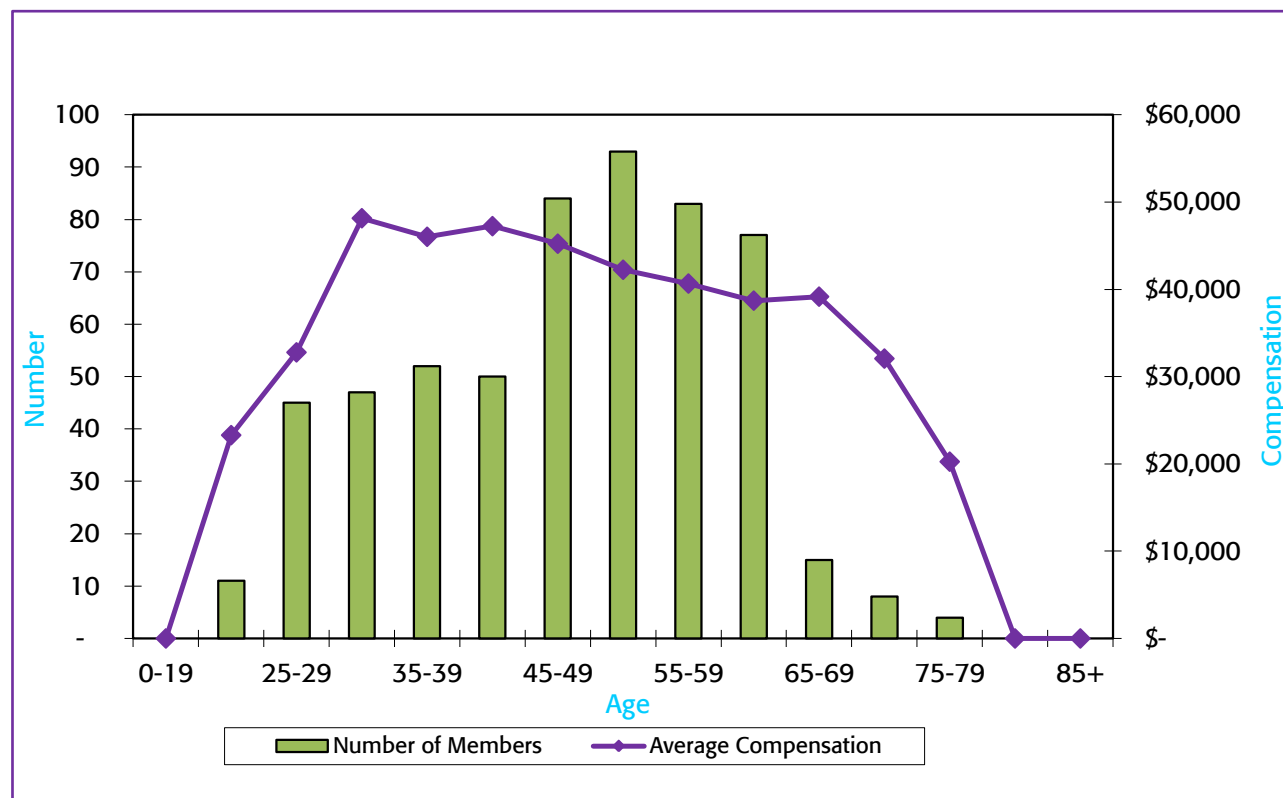
- Employee age has increased by 1.8 years and service has increased by 1.8 years over the past twelve years. This is consistent with the overall trend towards an aging of the employee population. Average annual compensation has grown by 42.6% (3.0% annually) over the past twelve years.

The charts on the following pages summarize demographic information regarding active and retiree members.

Distribution of Plan Members as of January 1, 2014

Active Members

AGE	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40 + Years	Total	Total Compensation	Average Compensation
0-19	-	-	-	-	-	-	-	-	-	-	\$ -	\$ -
20-24	11	-	-	-	-	-	-	-	-	11	256,227	23,293
25-29	39	5	-	-	1	-	-	-	-	45	1,474,912	32,776
30-34	20	22	5	-	-	-	-	-	-	47	2,262,770	48,144
35-39	20	10	16	6	-	-	-	-	-	52	2,392,848	46,016
40-44	17	2	14	9	8	-	-	-	-	50	2,361,836	47,237
45-49	22	14	13	18	7	9	1	-	-	84	3,799,089	45,227
50-54	19	17	17	13	8	17	2	-	-	93	3,928,342	42,240
55-59	11	10	18	14	9	15	2	4	-	83	3,374,784	40,660
60-64	4	13	10	17	14	10	4	4	1	77	2,980,029	38,702
65-69	-	1	4	2	4	3	-	-	1	15	587,424	39,162
70-74	1	-	-	2	3	2	-	-	-	8	256,514	32,064
75-79	-	-	2	-	1	-	1	-	-	4	81,015	20,254
80-84	-	-	-	-	-	-	-	-	-	-	-	-
85+	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	164	94	99	81	55	56	10	8	2	569	\$ 23,755,789	\$ 41,750

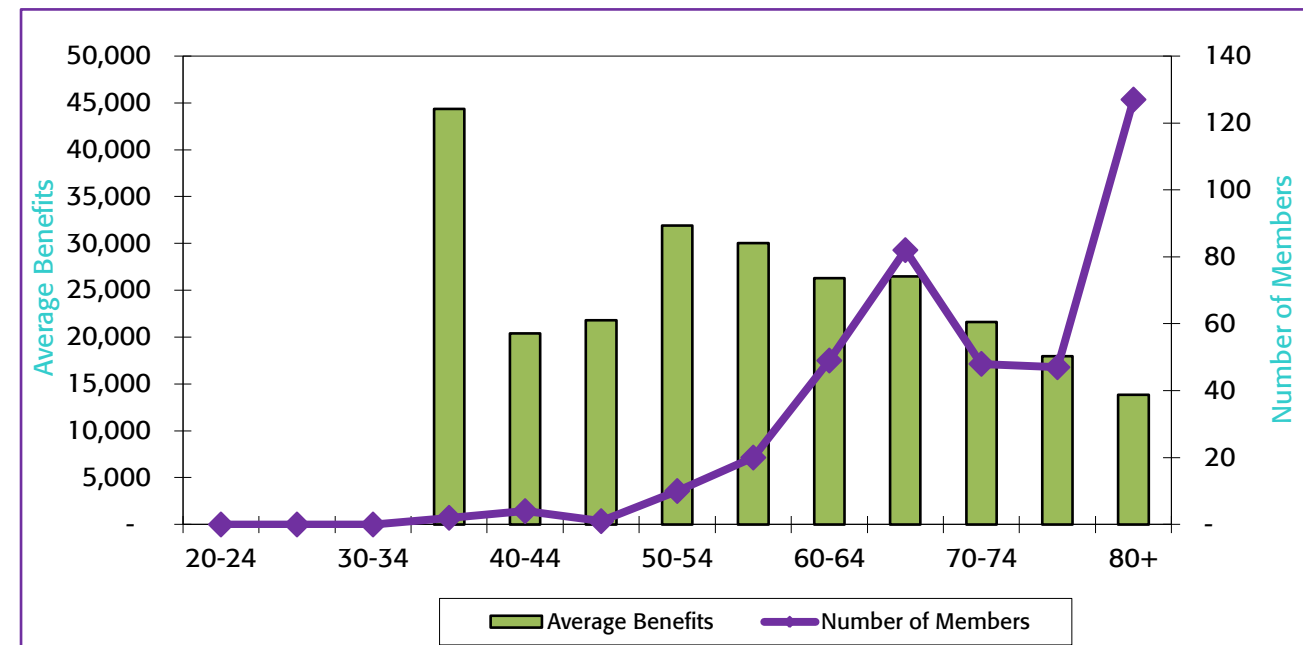


Distribution of Plan Members as of January 1, 2014
Retired Members

Retired Members and Beneficiaries			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	1	47,996	47,996
40-44	2	5,960	11,919
45-49	1	21,778	21,778
50-54	6	25,408	152,448
55-59	17	30,554	519,421
60-64	44	26,214	1,153,396
65-69	74	26,822	1,984,813
70-74	44	21,506	946,244
75-79	39	14,919	581,828
80+	122	13,538	1,651,604
TOTAL	350	\$ 20,204	\$ 7,071,448

Disabled Members			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	1	40,705	40,705
40-44	2	34,806	69,612
45-49	-	-	-
50-54	4	41,654	166,615
55-59	3	26,948	80,845
60-64	5	26,848	134,238
65-69	8	23,315	186,524
70-74	4	22,956	91,822
75-79	8	32,889	263,109
80+	5	21,262	106,311
TOTAL	40	\$ 28,495	\$ 1,139,781

Total			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	2	44,350	88,701
40-44	4	20,383	81,531
45-49	1	21,778	21,778
50-54	10	31,906	319,063
55-59	20	30,013	600,266
60-64	49	26,278	1,287,634
65-69	82	26,480	2,171,337
70-74	48	21,626	1,038,066
75-79	47	17,977	844,937
80+	127	13,842	1,757,916
TOTAL	390	\$ 21,054	\$ 8,211,229



Benefits shown are net of State reimbursed COLA.

Valuation Methodology

Stone Consulting, Inc. used the Entry Age Normal actuarial funding method in this actuarial valuation. The use of the Entry Age Normal actuarial funding method is consistent with the requirements of Chapter 32 of the Massachusetts General Laws.

NORMAL COST

Valuation Date	January 1, 2014	% of Payroll*
Gross Normal Cost (GNC)	\$3,130,913	13.2%
Employees Contribution	<u>\$2,123,794</u>	<u>8.9%</u>
Net Normal Cost (NNC)	\$1,007,119	4.2%
Adjusted to Beginning of Fiscal Year 2016	\$61,027	
Administrative Expense	<u>\$226,450</u>	1.0%
Adjusted Net Normal Cost With Admin. Expense	\$1,294,596	

*Payroll paid in 2013 for employees as of January 1, 2014 is \$23,755,789. Payroll for new hires in 2013 was annualized.

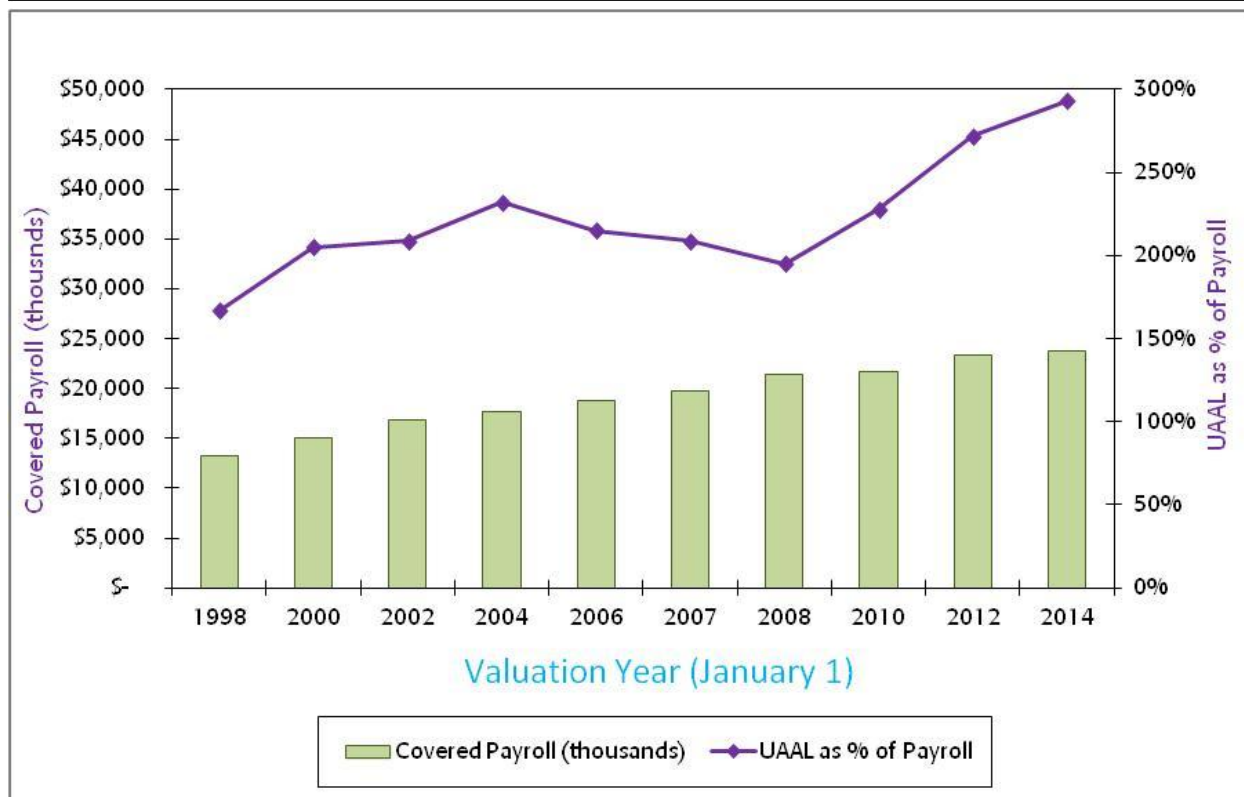
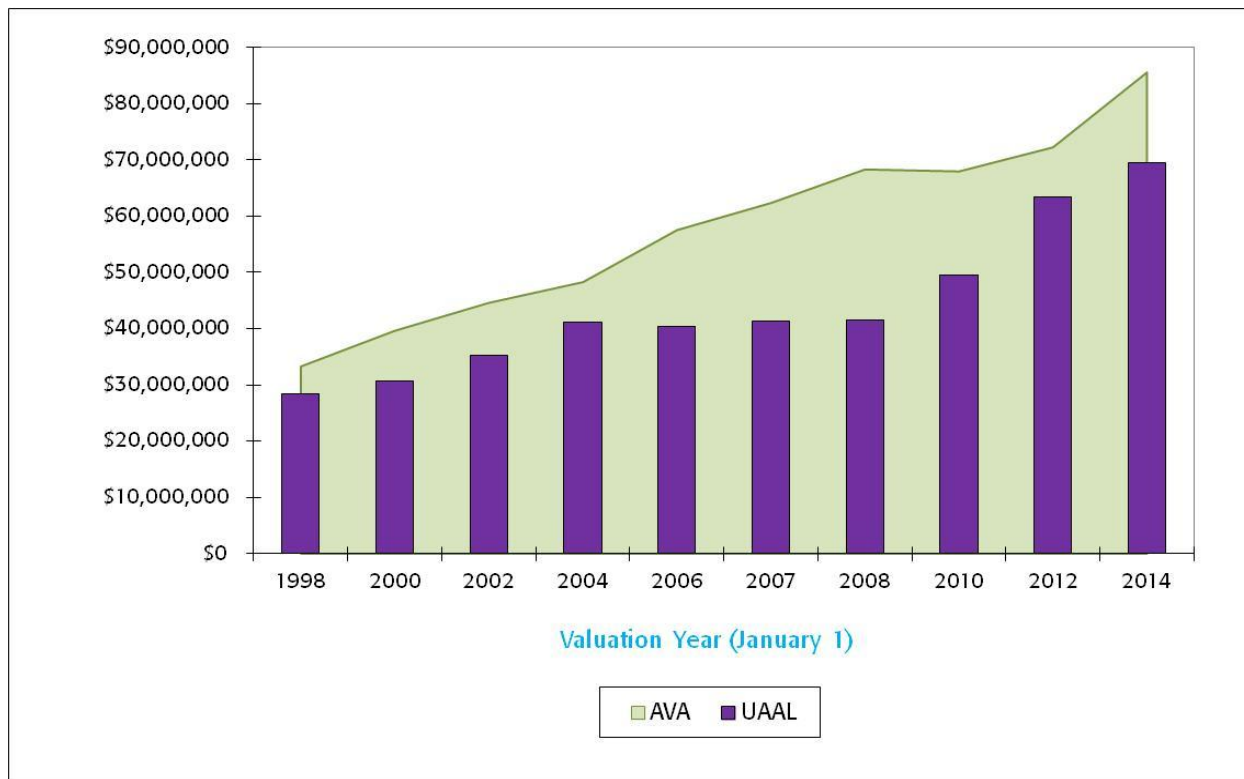
- The gross normal cost (GNC) is the “price” of benefits accruing in the current year if the assumptions underlying the normal cost were realized.
- An individual normal cost represents that part of the cost of a member’s future benefits that are assigned to the current year as if the costs are to remain level as a percentage of the member’s pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and withdrawals) are included in this calculation.
- Anticipated employee contributions to be made during the year are subtracted from the GNC to determine employer normal cost, or net normal cost (NNC).
- Administrative expenses added to the NNC. The administrative expense does not include investment manager and custodial fees. These fees are considered part of the interest rate assumption that is net of fees.

Actuarial Accrued Liability and Funded Status

	January 1, 2014	Percentage Change
Active Actuarial Accrued Liability		
Superannuation 65,449,332		
Death 1,623,590		
Disability 4,579,680		
Withdrawal 684,866		
Total	\$72,337,468	12.7%
Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability		
Retirees and Beneficiaries 69,545,533		
Disabled 12,326,639		
Inactive 919,745		
Total	<u>82,791,917</u>	15.7%
Total Actuarial Accrued Liability (AAL)	\$155,129,385	14.3%
Actuarial Value of Assets (AVA)	<u>85,583,879</u>	18.4%
Unfunded Actuarial Accrued Liability	\$69,545,506	9.5%
Funded Ratio (AVA / AAL)		
2014 (7.875% interest rate):	55%	
2012 (7.75% interest rate):	53%	

- Actuarial Accrued Liability (AAL) is the “price” of benefits attributable to benefits earned in past years, or in other words, represents today’s value of all benefits earned by active and inactive members.
- The total AAL is \$155,129,385. This along with an actuarial value of assets of \$85,583,879 produces a funded status of 55%. This compares to a funded status of 53% for the 2012 valuation.
- The charts on the following page are:
 - History of the unfunded actuarial accrued liability (UAAL) and the valuation assets (AVA) over the course of the past ten actuarial valuations
 - History of UAAL as a percentage of covered payroll and covered payroll amount over the same period

Charts of Selected Actuarial and Demographic Statistics



Development of Funding Schedule

Net Employer Normal Cost for Fiscal 2016	\$1,294,596
Net 3(8)(c) payments	9,412
Amortization	4,710,580
Adjustment for quarterly payments	<u>172,036</u>
Total Appropriation required for Fiscal 2016	\$6,186,624

- The funding schedule is composed of the normal cost, the net 3(8)(c) payments and the amortization of the actuarial accrued unfunded liability and is adjusted by the administrative expense assumption. The contribution is assumed to be made in semiannual payments.
- The 3(8)(c) payments is the net of payments made to or from different Chapter 32 Retirement Systems to reflect benefits paid due to service either with the West Springfield Retirement System or other Chapter 32 Retirement Systems.
- The contribution amount for Fiscal 2016 is \$6,186,624. The funding schedule is presented on page 11. The schedule's length is twenty-one (21) years (for the fresh start base) which is one year longer than the January 1, 2012 valuation schedule's remaining length. The maximum funding schedule length allowed by Section 22F of Chapter 32 of the Massachusetts General Laws is twenty-five years to Fiscal 2040.
- In developing the funding schedule, we used a fresh start approach in which the unfunded actuarial accrued liability (UAAL), other than the UAAL due to past early retirement incentives, is reamortized instead of maintaining the existing amortization amount and separately amortizing the actuarial gain or loss. The use of a fresh-start approach can result in a funding schedule in which the changes in contribution amounts from year to year are more consistent. The amortization is adjusted each year to maintain a constant increase in the total contribution. The contribution amount for FY 2016 and beyond is a fixed amount based on increases of 4.00% for the next 20 years and a 65.65% decrease in the final year.
- Future contributions will be affected by the deferred net losses. At the time of the next valuation, as of January 1, 2016, there will be \$4,236,655 of net gains recognized, decreasing the UAAL by that amount. Another \$2,117,387 gain will be recognized in 2018. This has already been reflected in the funding schedule shown on page 11 of this report.



WEST SPRINGFIELD CONTRIBUTORY RETIREMENT SYSTEM

FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability*	Funding Amortization of UAAL	Net 3(8)(c) Payments	Schedule Contribution**	Adjusted for Quarterly Payments
2016	1,294,596	73,614,999	4,710,580	9,412	6,014,588	6,186,624
2017	1,346,380	74,330,642	4,899,380	9,412	6,255,172	6,434,089
2018	1,400,235	70,662,319	5,095,732	9,412	6,505,379	6,691,453
2019	1,456,244	70,729,956	5,299,937	9,412	6,765,594	6,959,111
2020	1,514,494	68,465,245	5,512,311	9,412	7,036,217	7,237,475
2021	1,575,074	67,910,478	5,733,180	9,412	7,317,666	7,526,974
2022	1,638,077	67,073,760	5,962,884	9,412	7,610,373	7,828,053
2023	1,703,600	65,923,357	6,201,776	9,412	7,914,788	8,141,175
2024	1,771,744	64,424,656	6,450,223	9,412	8,231,379	8,466,822
2025	1,842,614	62,539,920	6,708,609	9,412	8,560,634	8,805,495
2026	1,916,318	60,228,027	6,977,329	9,412	8,903,060	9,157,715
2027	1,992,971	57,444,190	7,256,799	9,412	9,259,182	9,524,023
2028	2,072,690	54,139,648	7,547,448	9,412	9,629,549	9,904,984
2029	2,155,598	50,261,336	7,849,722	9,412	10,014,731	10,301,184
2030	2,241,821	45,751,529	8,164,087	9,412	10,415,321	10,713,231
2031	2,331,494	40,547,452	8,491,027	9,412	10,831,934	11,141,760
2032	2,424,754	34,580,868	8,831,045	9,412	11,265,211	11,587,431
2033	2,521,744	27,777,622	9,184,663	9,412	11,715,819	12,050,928
2034	2,622,614	20,057,155	9,552,426	9,412	12,184,452	12,532,965
2035	2,727,519	11,331,976	9,934,900	9,412	12,671,830	13,034,284
2036	2,836,619	1,507,096	1,507,096	9,412	4,353,127	4,477,640
2037	2,950,084	-	-	9,412	2,959,496	3,044,147

Amortization of Unfunded Liability as of July 1, 2015

Year	Type	Original Amort. Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2005	ERI-Housing	5,947	0.00%	15	5,947	4
2005	ERI	127,732	0.00%	15	127,732	4
2016	Fresh Start	N/A	N/A	21	N/A	21

* Fiscal Years 2018 and 2020 recognize adjustment for the following deferred actuarial asset gains:

2018 : \$4,236,655
2020 : \$2,117,387

** Contributions are set to be the amount resulting from a 4.00% increase on the prior year's contribution.
The contribution in Fiscal 2036 decreases by 65.65%

Notes on Amortization of Unfunded Liability

Year is the year the amortization base was established.

Type is the reason for the creation of the base. Examples are Gain/(Loss) or Fresh Start.

Original Amortization Amount is the annual amortization amount when the base was established.

Percentage Increasing is the percentage that the Original Amortization Amount increases per year.

Original # of Years is the number of years over which the base is being amortized.

Current Amortization Amount is the amortization payment amount for this year.

Years Remaining is the number of years left to amortize the base.

Assumptions and Methodology Summary

The principal actuarial assumptions used in this valuation are the same as the assumptions used in the previous valuation, except where noted, and are summarized in the following table:

Valuation Date	January 1, 2014 Valuation										
Interest Rate	7.875%										
Salary Increase	4.00%										
COLA	3% of \$13,000										
COLA Frequency	Granted every year										
Mortality	RP-2000 table (sex distinct, healthy employees for actives and healthy annuitants for retirees) projected with scale BB and Generational Mortality. For members retired under an Accidental Disability (job-related), 40% of deaths are assumed to be from the same cause as the disability. Disabled mortality is the healthy retiree table ages set forward 2 years. <i>(Prior valuation used RP2000 projected 17 years with scale AA.)</i>										
Overall Disability	<table border="1"> <thead> <tr> <th></th><th>Ordinary</th><th>Accidental</th></tr> </thead> <tbody> <tr> <td>Groups 1 and 2</td><td>30%</td><td>70%</td></tr> <tr> <td>Group 4</td><td>10%</td><td>90%</td></tr> </tbody> </table>			Ordinary	Accidental	Groups 1 and 2	30%	70%	Group 4	10%	90%
	Ordinary	Accidental									
Groups 1 and 2	30%	70%									
Group 4	10%	90%									
Retirement Rates	Groups 1 and 2: Ages 55 – 70, Group 4: Ages 50 – 65										
	Post April 1, 2012 Hires:										
	Groups 1 and 2: Ages 60 – 70, Group 4: Ages 50 – 65										
Administrative Expense	\$226,450 budget estimated for FY 2016 provided by West Springfield Retirement Board.										

Assets

a.	Cash	\$2,384,970.12
b.	Fixed Income	19,581,178.62
c.	Equities	65,665,812.12
d.	Pooled Real Estate Funds	2,723,643.83
e.	Sub-Total:	\$90,355,604.69
f.	Interest Due and Accrued	\$148,902.69
g.	Accounts Receivable	1,461,649.71
h.	Accounts Payable	<u>(28,235.61)</u>
i.	Sub-Total:	\$1,582,316.79
j.	Market Value of Assets [(e) + (i)]	\$91,937,921.48

- We were furnished with the System's annual report by the Board. The market value of assets as of December 31, 2013 (adjusted for payables and receivables) is \$91,937,921.48.
- The asset allocation as of December 31, 2013 was approximately 26% cash, receivables, payables and fixed income and 74% equities and real estate.
- Historically, 10 to 11% has been the expected long-term rate of return for equities, and 6% to 7% has been the expected long-term rate of return for fixed income securities. Many economists and investment professionals are projecting lower returns of 7.00% to 8.50% for domestic equities, 8.25% to 8.50% for international equities, 9.50% for emerging markets, 8.00% for hedge funds, 10% for venture capital, 6.00% for real estate and 4.50% for core fixed income securities. In light of these projections, as well as historical investment returns, the 7.875% interest rate assumption is within the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations.

Calculation of Valuation Assets

1. Market value of assets including receivable/payable as of 01/01/2014 \$91,937,921

2. Phase-in of asset gains and losses

	Plan Year (1)	Original Amount (2)	Percent Unrecognized (3)	Amount Unrecognized (2) x (3)
a.	2013	\$8,469,548	75%	\$6,352,161
b.	2012	\$1,636,000	50%	\$818,000
c.	2011	(\$3,264,474)	25%	(\$816,118)
d.	2010	\$1,862,125	0%	\$0
e.	2009	\$2,411,555	0%	\$0
g.	Total			\$6,354,042

3. Valuation assets without corridor as of 01/01/2014 \$85,583,879
(1. - 2.g.)

4. Corridor Check

a. 90% of Market Value \$82,744,129
b. 110% of Market Value \$101,131,714

5. Valuation assets with corridor as of 01/01/2014 \$85,583,879

6. Calculation of return on valuation assets

a. Valuation assets as of 01/01/2012 72,256,105
b. ER contribs + EE contribs - Ben Pymts - Expenses (787,851)
c. Actual return on valuation assets \$14,115,625
5. - (6.a. + 6.b.)
d. Weighted value of valuation assets \$70,168,414
e. Return on valuation assets 20.1%
6.c. / 6.d.
f. Annualized return on valuation assets 9.6%

Disclosure Information Under GASB Statement 25

SCHEDULES OF FUNDING PROGRESS (Dollars In Thousands)

Actuarial Valuation Date	Actuarial Value of Assets A	Actuarial Accrued Liability B	Unfunded AAL (UAAL) B-A	Funded Ratio A/B	Covered Payroll C	UAAL as a % of Covered Payroll (B-A)/C
1/1/2014	\$85,584	\$155,129	\$69,545	55%	\$23,756	293%
1/1/2012	\$72,256	\$135,741	\$63,485	53%	\$23,378	272%
1/1/2010	\$67,972	\$117,463	\$49,491	58%	\$21,750	228%
1/1/2008	\$68,327	\$109,918	\$41,590	62%	\$21,375	195%
1/1/2007	\$62,357	\$103,698	\$41,341	60%	\$19,771	209%

Notes to Schedules

Additional information as of the latest actuarial valuation follows:

Valuation date	1/1/2014
Actuarial cost method	Entry Age Normal
Amortization method	Closed - Approximate level percent of payroll
Remaining amortization period	21 years for the fresh start base
Asset valuation method	Market value adjusted by accounts payable and receivables adjusted to phase in over 4 years investment gains or losses above or below the expected rate of investment return. The actuarial value of assets must be no less than 90% of the adjusted market value nor more than 110% of the adjusted market value. Market value of assets is \$91,937,921.

Actuarial Assumptions

Investment rate of return	7.875% per year
Projected salary increases	4.00%

PERAC Information Disclosure

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2014

The normal cost for employees on that date was:	\$2,123,794	8.9% of payroll
The normal cost for the employer was:	\$1,007,119	4.2% of payroll

The actuarial liability for active members was:	\$72,337,468
The actuarial liability for retired members was (includes inactives):	\$82,791,917
Total actuarial accrued liability:	\$155,129,385
System assets as of that date (market value: \$91,937,921):	<u>\$85,583,879</u>
Unfunded actuarial accrued liability:	\$69,545,506

The ratio of system's assets to total actuarial liability was:	55%
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As of that date the total covered employee payroll was:	\$23,755,789
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The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	7.875% per annum
Rate of Salary Increase:	4.00%

SCHEDULE OF FUNDING PROGRESS (Dollars in \$1,000's)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll ©	UAAL as a % of Covered Payroll ((b-a)/c)
1/1/2014	\$85,584	\$155,129	\$69,545	55%	\$23,756	293%
1/1/2012	\$72,256	\$135,741	\$63,485	53%	\$23,378	272%
1/1/2010	\$67,972	\$117,463	\$49,491	58%	\$21,750	228%
1/1/2008	\$68,327	\$109,918	\$41,590	62%	\$21,375	195%
1/1/2007	\$62,357	\$103,698	\$41,341	60%	\$19,771	209%

Actuarial Methods and Assumptions

ACTUARIAL METHODS

Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method has been used in this valuation. Under this method, the normal cost is the amount calculated as the level percentage of compensation necessary to fully fund the prospective benefits from each member's entry age to retirement age.

The actuarial accrued liability represents the theoretical accumulation of all prior years' normal costs for the plan members as if the program had always been in effect. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over plan assets.

Asset Valuation Method

Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a four-year rolling period. The phase-in is 25% for year one, 50% for year two, 75% for year three, and 100% for year four. The actuarial value of assets may be no less than 90%, or more than 110% of the market value of assets plus payables and receivables.

Fiscal Year Adjustment

The actuarial results are adjusted by the valuation interest rate and salary scale to the beginning of Fiscal Year 2016. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

ACTUARIAL ASSUMPTIONS

Investment Return

7.875% per year net of investment expenses.

Salary Increases

4.00%

Actuarial Methods and Assumptions (Continued)

Withdrawal Prior to Retirement

The rates shown at the following sample ages illustrate the withdrawal assumption. Withdrawal rates are set to zero if the retirement rate at that age is nonzero.

Rate of Withdrawal

Service	Group 1 and 2	Group 4
0	15%	1.5%
1	12%	1.5%
2	10%	1.5%
3	9%	1.5%
4	8%	1.5%
5	7.6%	1.5%
10	5.4%	1.5%
15	3.3%	0.0%
20	2.0%	0.0%
25	1.0%	0.0%
30+	0.0%	0.0%

Disability Prior to Retirement

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability:

Rate of Disability

Age	Group 1 and 2	Group 4
20	0.01%	0.10%
25	0.02%	0.20%
30	0.03%	0.30%
35	0.06%	0.30%
40	0.10%	0.30%
45	0.15%	1.00%
50	0.19%	1.25%
55	0.24%	1.20%
60	0.28%	0.85%

Disability is assumed to be 30% ordinary and 70% accidental for Group 1 and 2 and 10% ordinary and 90% accidental for Group 4.

Actuarial Methods and Assumptions (Continued)

Rates of Retirement

The rates shown at the following ages illustrate the assumption regarding the incidence of retirement. A member would need to be eligible for the benefit to be assumed to retire. See Summary of Principal Provisions Number 5 for eligibility requirements.

Age	Group 1 & 2 Male	Group 1 & 2 Female	Group 4	Hired after 4/1/2012		
				Group 1 & 2 Male	Group 1 & 2 Female	Group 4
50	1%	1.5%	2%	0%	0%	1.5%
51	1%	1.5%	2%	0%	0%	1.5%
52	1%	2.0%	2%	0%	0%	1.5%
53	1%	2.5%	2%	0%	0%	1.5%
54	2%	2.5%	7.5%	0%	0%	5%
55	2%	5.5%	15%	0%	0%	10%
56	2.5%	6.5%	10%	0%	0%	7%
57	2.5%	6.5%	10%	0%	0%	20%
58	5%	6.5%	10%	0%	0%	10%
59	6.5%	6.5%	15%	0%	0%	15%
60	12%	5%	20%	25%	30%	20%
61	20%	13%	20%	20%	13%	20%
62	30%	15%	25%	30%	15%	25%
63	25%	12.5%	25%	25%	12.5%	25%
64	22%	18%	30%	22%	18%	30%
65	40%	15%	100%	40%	15%	100%
66	25%	20%	N/A	25%	20%	N/A
67	25%	20%	N/A	25%	20%	N/A
68	30%	25%	N/A	30%	25%	N/A
69	30%	20%	N/A	30%	20%	N/A
70	100%	100%	N/A	100%	100%	N/A

Mortality

The RP-2000 mortality table (sex-distinct) projected with scale BB and Generational Mortality. *(Prior valuation used RP-2000 mortality table projected 17 years with scale AA.)* During employment the healthy employee mortality table is used. Post-employment the healthy annuitant table is used.

Disabled Life Mortality

The RP-2000 mortality table for healthy annuitants (sex-distinct) projected with scale BB and Generational Mortality set-forward by 2 years. Death is assumed to be due to the same cause as the disability 40% of the time. *(Prior valuation used RP-2000 mortality table projected 17 years with scale AA.)*

Actuarial Methods and Assumptions (Continued)

Regular Interest Rate Credited to Annuity Savings Account

2% per year.

Family Composition

Members assumed married with 2 dependent children – one male and one female both age 15; age difference between member and spouse assumed to be 3 years (the male being the older).

Cost-of-Living Increases

A 3% COLA on the first \$13,000 of a member's retirement allowance is assumed to be granted every year.

Administrative Expenses

Estimated budgeted amount of \$226,450 for the Fiscal Year 2016 excluding investment management fees and custodial fee is added to the Normal Cost.

Step Increases

Step increases are assumed to be part of the salary increase assumption.

Credited Service

All service is assumed to be due to employment with the municipality.

Net 3(8)(c)

Net 3(8)(c) payments are added to the contribution amount, they have not been included in the Accrued Liability. They are assumed to remain constant.

Contribution Timing

Contributions are assumed to be made quarterly.

Municipality

Refers to the various employers that comprise the Retirement System.

Valuation Date

January 1, 2014.

Summary of Principal Provisions

1. PARTICIPANT

Participation is mandatory for all full-time employees whose employment commences before age 65. There are three classes of members in the retirement system:

- Group 1: general employees
- Group 2: employees in specified hazardous occupations (e.g., electricians)
- Group 4: police and firefighters

2. MEMBER CONTRIBUTIONS

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5% of Pay
1975 – 1983	7% of Pay
1984 – June 30, 1996	8% of Pay
After June 30, 1996	9% of Pay

Members hired after 1978 contribute an additional 2% of pay over \$30,000.

3. PAY

a. Pay

Gross regular compensation excluding bonuses, overtime, severance pay, unused sick pay, and other similar compensation.

b. Average Pay

The average of pay during the three consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement. For members hired after April 1, 2012, five-year averages will be used.

4. CREDITED SERVICE

Period during which an employee contributes to the retirement system plus certain periods of military service and "purchased" service.

5. SERVICE RETIREMENT

a. Eligibility

Completion of 20 years of credited service or attainment of age 55 and completion of 10 years of credited service. If hired prior to 1978 or a member of group 4, attainment of age 55.

Summary of Principal Provisions (Continued)

b. Retirement Allowance

Determined as the product of the member's benefit percentage, average pay and credited service, where the benefit percentage is shown below (maximum allowance of 80% of average pay):

Benefit Percentage	Group 1	Group 2	Group 4
2.5%	65+	60+	55+
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	N/A	49
1.8	58	N/A	48
1.7	57	N/A	47
1.6	56	N/A	46
1.5	55	N/A	45
Hired after April 1, 2012*			
2.5%	67+	62+	57+
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

*Reduction is .125% for each year early instead of .15% per year for employees with over 30 years of service.

In addition, veterans receive an additional \$15 per year for each year of credited service up to 20 years

6. DEFERRED VESTED RETIREMENT

a. Eligibility

Completion of 10 years of credited service.

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section above with the member eligible to start collecting a benefit at age 55, (or age 57 for post-April 1, 2012 hires) or defer until later at his or her discretion. If a member chooses, his or her contributions with interest may be withdrawn. The amount of interest he or she will receive depends on length of service and whether or not the termination of employment was voluntary.

Summary of Principal Provisions (Continued)

7. ORDINARY DISABILITY RETIREMENT

a. Eligibility

Non-job related disability after completion of 10 years of credited service.

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section and calculated as if the member had attained age 55 (or age 57 for those hired after April 1, 2012), if younger. Veterans receive 50% of pay (during final year) plus an annuity based on accumulated member contributions with interest.

8. ACCIDENTAL DISABILITY RETIREMENT

a. Eligibility

Disabled as a result of an accident in the performance of duties. No age or service requirement.

b. Retirement Allowance

72% of pay plus an annuity based on accumulated member contributions with interest. Also, a dependent's allowance per year for each child. Total allowance not to exceed 100% of pay (75% for members hired after 1987).

9. NON-OCCUPATIONAL DEATH

a. Eligibility

Dies while in active service, but not due to occupational injury.

b. Retirement Allowance

Benefit as if Option C had been elected (see below) and member had attained age 55 (or age 57 for those hired after April 1, 2012) if younger. Minimum monthly benefits provided as follows: spouse - \$500, first child - \$120, each additional child - \$90

10. OCCUPATIONAL DEATH

a. Eligibility

Dies as a result of an occupational injury.

Summary of Principal Provisions (Continued)

b. Benefit Amount

72% of pay plus refund of annuity savings fund balance. In the case of an accidental disability retiree who dies of the same cause, the beneficiary receives 72% of the last 12 months salary or the current pension amount, whichever is greater.

11. COST-OF-LIVING INCREASES

An increase of up to 3% applied to the first \$13,000 of annual benefit. Funded by the Municipality from Fiscal Year 1999. Percentage increase is voted on each year by the Retirement Board. Cost-of-living increases granted during Fiscal Year 1982 through Fiscal 1998 are reimbursed by the Commonwealth.

12. OPTIONAL FORMS OF PAYMENT

▪ Option A

Allowance payable monthly for the life of the member.

▪ Option B

Allowance payable monthly for the life of the member with a guarantee of remaining member contributions with interest.

▪ Option C

Allowance payable monthly for the life of the member with 66-2/3% continuing to the member's beneficiary upon the member's death. If the beneficiary predeceases the member, the allowance amount "pops up" to the non-reduced amount.

Glossary of Terms

▪ Present Value of Benefits

Represents the dollar value today of all benefits expected to be earned by current members if all actuarial assumptions are exactly realized.

▪ Actuarial Cost Method

The procedure that is used to allocate the present value of benefits between the liability that is attributable to past service (Actuarial Accrued Liability) and that attributable to future service.

Glossary (continued)

- **Actuarial Assumptions**

Estimates are made as to the occurrence of certain events that determine the level of benefits to be paid and how long they will be provided. The more important actuarial assumptions include the investment return on assets, salary increases and the rates of turnover, disability, retirement and mortality.

- **Actuarial Accrued Liability**

The portion of the Present Value of Benefits that is attributable to past service.

- **Normal Cost**

The portion of the Present Value of Benefits that is attributable to benefits to be earned in the coming year.

- **Actuarial Assets**

Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a four-year rolling period. The phase-in is 25% for year one, 50% for year two, 75% for year three and 100% for year four. The actuarial value of assets may be no less than 90%, or more than 110% of the market value of assets plus payables and receivables.

- **Unfunded Actuarial Accrued Liability**

That portion of the Actuarial Accrued Liability not covered by System Assets.

- **PERAC**

Public Employee Retirement Administration Commission, a division of the State government which has regulatory authority over the administration of the retirement system.

- **PRIT**

Pension Reserves Investment Trust Fund is the state controlled and administered fund for the investment of assets for members of the retirement system.

- **GASB**

Government Accounting Standards Board (issues guidance for disclosure of retirement system liabilities).